THE FARM INDEX

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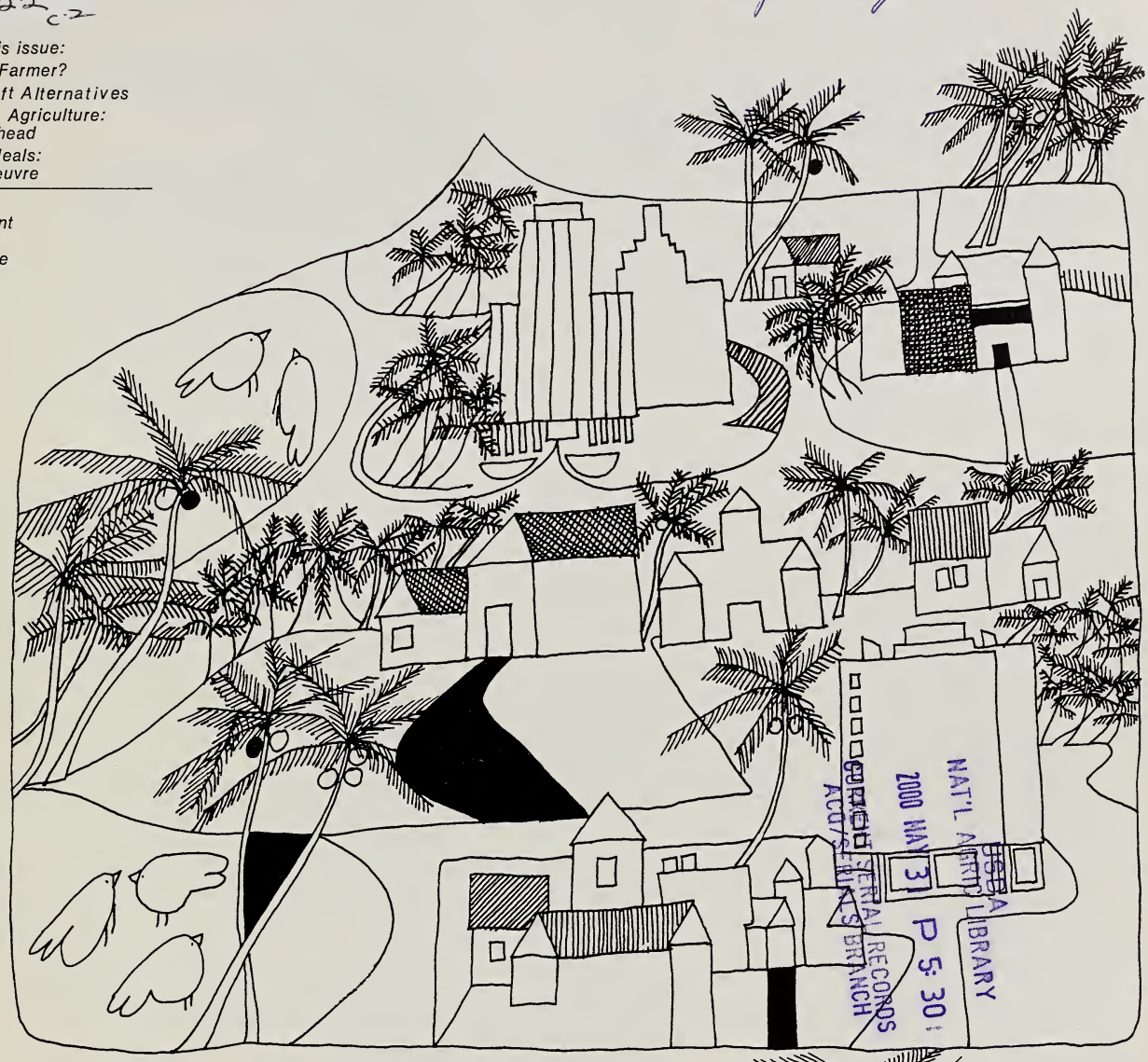
U.S. Department of Agriculture

Economic Research Service



PROBLEMS IN PARADISE

THE AGRICULTURAL OUTLOOK

Big supplies of farm products in early 1969. Larger supplies of livestock and crop products are likely to dampen early 1969 farm prices. But expected gains in cotton, oilseeds, fruit, and vegetable marketings may bring total cash receipts to producers slightly above those in the first half of 1968.

Slower gains in demand for food and less price rise likely in upcoming months. With prospects for more beef, pork, chicken, citrus fruits, and vegetables, early 1969 retail food prices for food at home may average about the same as a year earlier; prices for food eaten away from home are expected to continue 4 to 5 percent above a year earlier.

Farmers had record amount to spend in 1968. Latest estimates show farm people in 1968 had about double the $1,100 per person of disposable personal income they had in 1960. The reason: estimated gains not only in farm income but also in off-farm earnings.

Gross farm income overcomes 3-percent rise in production cost. Farm production expenses this year are expected to reach a level of around $36 billion—up about $1.25 billion from 1967. But gross farm income will probably show a higher rise than expenses, leaving a realized net farm income of around $15 billion, compared with $14.2 billion last year.

No big change seen in market basket statistics in first half of 1969. The farm value of USDA's market basket of farm foods will probably decline in fourth quarter of 1968. The decline may continue in the first half of 1969, bringing farm value to around the year-earlier level. However, the farm-retail spread probably will widen (offsetting farm value decline) so retail cost of the market basket is not expected to change appreciably from late 1968. The farmer's share of the consumer dollar spent for foods in the market basket during the first half of 1969 probably will average 38 cents—1 cent less than in the first half of this year.

U.S. wheat production, carryover up. The 1968/69 bumper crop pushed October 1 wheat stocks up 9 percent from a year earlier to 1,690 million bushels, the highest for that date since 1965. If domestic and export demand continues as estimated, a carryover of some 600 to 650 million bushels next July is possible. That would be approximately 100 million bushels over the 537-million-bushel estimate of the 1968 carryover. If use falls off, the July 1969 carryover could be over 700 million bushels.

Strong consumer demand for meat continues. And it is likely to do so through 1969, though any increase in demand will probably be less than in 1968. Producers stepped up red meat production this year and next year is likely to see another rise. Consumer demand for meat, continuing strong, is expected to increase less than in 1968, taking some buoyancy out of prices. With larger red meat and poultry output, 1969 prices to farmers may average a little lower than this year.

No change in milk production in the cards for 1969. Next year's milk output is expected to plateau near 118 billion pounds—the same amount estimated for 1968. Milk cow numbers will probably drop again in 1969, but sharp gains are in prospect for output per cow and should make up the difference in total milk producton. Prices farmers receive for milk from now through March 1969 are expected to be 5 percent higher than year-earlier prices.

Though 1968 cotton crop is 46 percent larger than 1967, use eats into stocks. The November cotton crop estimate of 10.9 million running bales is 46 percent over 1967's very small crop, but 22 percent under the 1962-66 average. Though use is expected to be smaller than the previous year, it is likely to be larger than production. Thus, much of this year's cotton consumption may be drawn from privately-owned stocks which totaled 6.3 million bales last August.

WHO IS A FARMER?

Today's farmer isn't always the man who owns the land or works it. He's really the man who puts together the resources that are needed to produce food and fiber.

Mr. Jones owns stock in an auto company. Mr. Smith works there assembling parts. Neither, however, can be termed an automobile manufacturer in the true sense of the word.

Owning farmland, or tilling farmland, likewise doesn't make a farmer.

There are lots of people who own farmland but aren't farmers. In fact, nearly two-fifths of America's farm real estate assets are owned by people who list their professions as nonfarm pursuits.

And about a fourth of the work done on U.S. farms is performed by hired workers—few of whom live or work on farms year-round.

Who then is a farmer—if he's not simply a landowner or a farmworker? And what, basically, does he do?

In the modern context, a farmer is a man who makes the decision to mix land, labor, and capital to produce food and fiber.

The land, the labor, and the capital aren't always the farmer's own. In fact, full ownership of all these resources is the exception rather than the rule for many of today's most successful farm operators.

Cash on the barrelhead is one way of doing business. But it can put a pretty sizable dent in a farmer's savings if he uses cash to buy outright all the resources he needs.

Consequently, many farmers today make money by the judicious use of other people's money. And they don't aim for full ownership of all resources.

The 1964 Agricultural Census showed that 42 percent of all U.S. farmers rented all or part of the land in their farms. In this fashion, they acquired the use of land at a fraction of its purchase price.

Farmers can also rent a lot of the machinery, equipment, and even the livestock they need.

In parts of the West, rental of beef cows has developed into an important industry. Landowners can thus stock their farms without any major capital commitment by renting cows from private cattle owners—who in turn gain tax advantages via the capital gains treatment of income from breeding stock.

Rental contracts for dairy cows have also been developed in the Northeast and North Central dairy regions. They are particularly worthwhile for farmers who are just entering the dairy business, as well as men who are getting out of it.

An older farmer with a small, high quality dairy herd can retire from dairying gracefully by renting out his cows to other dairymen. He gets a good rental in-

come while the renter gets a good cow for much less than it would cost to buy.

Another form of rental is found in the case of service and equipment. In the Great Plains Region —America's granary—many big wheat growers have never owned a combine. Reason: They custom hire this service from a man who specializes in combining and therefore avoid the expense of owning and caring for costly machinery. At the same time they're assured the services of a professional operator.

Under the custom hire system small farms have access to the same advanced technology used on large farms—and thus they can achieve many of the economies of large farms.

Custom hiring is a common practice in the harvesting and ginning of cotton, the drying of peanuts, the grinding and mixing of livestock feeds, and the application of gaseous and liquid fertilizers. In some parts of the country, custom beef feeding lots and custom dairy operations are also gaining importance.

Money capital, too, can be rented. The interest on a loan, in a sense, is the rent the farmer must pay for money's use.

Properly used, debt can be a powerful tool for acquiring farm resources. With debt, a farmer can acquire land with a minimum downpayment. This entitles him to all services of the land, plus the full returns to ownership, including the appreciation in the land's value.

Debt can also be used to buy the machinery and equipment, livestock, and other resources the farmer needs. Operating loans for annual production expenses are available from banks, Production Credit Associations, the Farmers Home Administration, individuals, and dealers who supply production inputs.

The enterprising farmer often finds the returns to use of operating funds are much greater than the cost of those funds.

Joint account farming or vertical coordination are still other tactics that can be used to acquire resources.

Joint account farming is closely akin to tenant farming. Put simply, it means that a farmer agrees to share the returns from farming with a landowner as payment for the use of land.

There's no simple way to describe vertical coordination. It can involve the farmer with any or all of the off-farm firms that supply his inputs or market his output. However, vertical coordination is most often accomplished through contracts—and each contract is written differently.

In some cases, the farmer may relinquish an agreed-upon share of his returns to the contractor who provides him with inputs.

In other cases, the farmer may produce goods for the contractor for a specified price. From that point on, the contractor reaps the profits or takes the losses, depending on market prices.

Recent estimates show about 95 percent of U.S. broiler output is produced under contract, as are 95 percent of the broiler-type hatching eggs; nearly 35 percent of the table eggs; 85 percent of the turkeys; a tenth of the hogs; 30 percent of the beef cattle; 25 percent of the lamb and mutton; nearly all of the citrus fruits; and 90 percent of the vegetables for canning and freezing. *(1)*

One Sure Way To Kill Pests Not Enough for Most Farmers Today

To plant a seed.
To watch it grow.
To catch a greedy grub
Nipping at it so.
—Child's Rhyme

Oldtimers used to say the only sure way to kill a pesty insect was to put it on a wooden block and strike it sharply with another wooden block.

Fortunately for the U.S. economy, very few of today's farmers depend on this method to kill an insect, weed, or fungus. Instead, they rely on a corps of efficient chemical agents to do the job.

Over a third of all farmers growing crops used herbicides in 1966. Well over a fourth used insecticides. About 4 percent used fungicides. And 8 percent used a hodgepodge of other pesticides.

These findings are based on a nationwide Economic Research Service survey of 9,600 farmers in 417 counties in the 48 contiguous States.

Weed killers. Today's farmer uses herbicides—chemicals that kill or inhibit plant growth—mainly as a substitute for labor and equipment in killing weeds. Use of these chemicals has increased tremendously in the last 10 or 15 years.

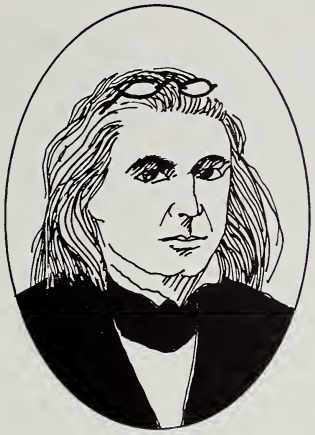
Only 11 percent of corn acreage, for example, was treated with herbicides in 1952. But by 1966, 57 percent of corn acres was treated. Similarly, weed killers were used on only 7 percent of cotton acreage in 1958. By 1966, over 50 percent of cotton plantings was getting the treatment.

Weed killers are used mainly on row crops. Half the 1966 acreage planted in corn, cotton, rice, peanuts, and potatoes were treated with herbicides, but seldom were they used on tobacco, hay, or many fruit crops.

About 37 percent of all farmers used weed control chemicals on more than 1 out of 4 of their acres—not counting pasture and open range where controlling weeds is not so important.

Only 12 percent of the smaller farms with annual sales under $2,500 used herbicides on slightly more than 1 out of 10 of their crop acres.

On the other hand, almost three-quarters of the larger farms selling more than $40,000 a year had almost 4 out of 10 of their



Men and Milestones

THE NATION'S FIRST SOIL SCIENTIST

Returning to family lands at Coggins Point, Va., after serving briefly in the War of 1812, Edmund Ruffin sees something that disturbs him. Fellow farmers in older sections are deserting unprofitable fields for new lands out West. "Why is this once fertile land now barren?" Ruffin asks. And in searching for the answer, he uncovers secrets that open the way to scientific study of the soil.

* * *

While reading about and experimenting with "worn out" soils, Ruffin became convinced that current farm methods caused soils to become acid and therefore barren.

He was sure that adding lime and fertilizer, controlling erosion, and rotating crops would not only restore soil fertility but they would also boost crop yields above old levels.

Some farmers jeered at his theories but Ruffin persisted, discussing the results of his experiments in the *American Farmer* in 1821.

The next year he published a 242-page volume, "An Essay on Calcareous Manures" — which became one of the most widely studied works on American agriculture in the 19th century. In 1833, he founded the *Farmer's Register*, a publication that spurred agricultural advances for a decade.

Unfortunately, Ruffin was unable to change the ways of the average farmer who would benefit the most by adopting new farming methods.

Even when Ruffin was a member of the Virginia House of Delegates and of the State Board of Agriculture, people rejected his ideas. Disillusioned, he resigned from both positions.

Nevertheless, many of Edmund Ruffin's ideas eventually took hold, and he is remembered today as America's first soil scientist. *(3)*

crop acres treated with herbicides.

Insect control. Insecticides—chemicals used to kill or inhibit insects—represented 55 percent of 1964 farm pesticide expenses.

In 1966, about 29 percent of all farmers were using these products.

Only about 5 percent of all farm acres were treated to control insects, however. But when you subtract land not normally treated—such as pasture and open range—this share rises to 12 percent.

The 1966 tobacco, peanut, fruit, and vegetable crops showed the most extensive use of insecticides. Over 80 percent of tobacco acreage got insect control treatment.

Nationwide, only about 19 percent of farms with annual sales of under $2,500 used insecticides, while 58 percent of those with sales over $40,000 used the chemicals. About 6 percent of cropland (not including pasture) on the smallest farms was treated. But usage ran to 21 percent on the largest farms.

Fungicides, etc. The number of farmers using fungicides—disease control chemicals—was small, in 1966, considering all crops and regions.

Only about 4 percent of farmers used fungicides, and then only on about 1 percent of their total crop acreage. Citrus and apples got most of the fungicides. Other fruits, vegetables, and peanuts got a lesser share.

Ten percent of farms with over $40,000 in annual sales reported fungicide use. Only 2 percent with sales under $2,500 reported using it.

Other pesticides — defoliants, desiccants, growth chemicals, and miticides—were used extensively on only a few crops. Acres so treated came to only a small percentage of total crop acreages.

(Miticides, incidentally, are chemicals used to kill or inhibit mites.)

Nearly 70 percent of the 1966 tobacco crop was treated with one or more of these chemicals, but mainly with plant regulators to control the growth of suckers.

Both insecticides and fungicides were used on 81 percent or more of all tobacco acreage in 1966.

Defoliants (leaf controlling chemicals) and desiccants (moisture absorbing chemicals) were used as harvesting aids and for controlling weeds after harvest on about one-fourth the cotton acreage.

Also, growth chemicals were used extensively on citrus and apple crops to control fruit setting and as a harvesting aid. *(2)*

Potato Farmers Sign Dotted Line, Reduce Risk of Bad Price Year

Is it worth tying up a whole season's potato crop to reduce the risk of having a bad price year?

For a growing number of potato farmers who are signing processor contracts, the answer is evidently "yes."

Potato farming has never been one of the more consistently profitable agricultural pursuits. Potato prices can and do vary widely on a seasonal basis from one production year to the next.

Since 1950, for example, average season prices have more than once doubled one year, only to drop drastically the following year.

Yet the potato farmer requires as much capital as the average farmer—a large investment in land, equipment, and facilities. And he pays a lot for annual out-of-pocket expenses on such items as seed, fertilizer, irrigation, and labor.

Because of the wide variations in prices, however, lenders are often cautious about extending credit to members of the potato industry.

To avoid losing everything in one bad price year, potato farmers traditionally have either had to limit their operations or diversify their crops.

Since 1950, however, many potato farmers in Idaho and elsewhere have turned to contract farming in order to help minimize their risks and create a more favorable credit base to get operating money.

These potato grower-processor contracts specify that the grower furnish the processor the yield of a given number of acres for an agreed-upon price per hundredweight.

They differ from most grower-processor contracts in that the price per hundredweight is an integral part of the document signed by the farmer.

With other farm commodities the price is usually either not specified or is determined later, according to a formula spelled out in the contract.

To the potato grower, the fact that the price is negotiated before planting means that he will know within fairly narrow limits how much he will make, and he can make production decisions accordingly.

By reducing price uncertainty, contractors have contributed to the dramatic expansion of the potato industry since 1950.

Other factors contributing to this expansion include new methods of processing and preserving potatoes, new marketing techniques, and the subsequent increased consumer demand for potatoes and potato products.

Estimates indicate that total potato acreage in Idaho has increased from an annual average of 146,000 acres in 1950-52 to nearly 300,000 acres in 1965-67.

And total Idaho production of potatoes rose during the same period from an average of about 27 million hundredweight in 1950-52 to over 65 million hundredweight in 1965-67. *(4)*

Conservative Wheat Farmer Goes Bankrupt in 10 Years—On Paper

You're a wheat farmer with $14,432 invested in a 400-acre dryland cash grain farm in Montana.

Farm machinery ties up $5,432 of your investment, and you've made a $9,000 downpayment on your land.

You owe $21,000 on your mortgage, payable monthly over the next 30 years at a 5-percent rate of interest.

And you have $4,000 cash in the bank to start your next season's crop on its way to harvest.

What would be your best strategy for maximum growth over a 30-year period?

A. To build equity in the land as fast as possible?

B. To refinance land purchases up to 2,000 acres and then build equity?

C. To rent the extra acres but otherwise build equity in the land?

D. To increase land size up to 2,000 acres without building equity, and use the surplus money not used to pay off the principal, for stocks, bonds or other off-farm investments?

E. To rent the extra acres and invest the surplus money off the farm?

Economic Research Service analysts correlated each of the five strategies with actual wheat crop yields and weather conditions that occurred on a typical wheat farm in Montana over a 30-year period.

The results showed that you—as a wheat farmer—would have been better off following almost any one of the five strategies except the first one, Strategy A, the most conservative.

In fact, following Strategy A as originally postulated, you would have gone bankrupt in 10 years.

It seems that if you don't increase your 400-acre farm size,

production of wheat from such limited acreage—even allowing for technological advances—would not be large enough to pay for the inflation that would occur in operating and machinery replacement costs.

By modifying the original strategy to include conservative investment in extra land, the farm could survive the 30-year period.

But it would still produce the lowest average annual rate of total and cash returns and the lowest returns in absolute dollars of any of the five strategies suggested.

The highest rates and absolute amounts of total and cash returns would result from Strategies C, D, and E—which included land rental and/or constant debt as an integral part of their growth pattern. This reflects their greater investment leverage as compared with Strategy A.

Strategy B (refinancing for increased acreage and then building equity) also showed up far better than Strategy A and generally rated well with the other strategies studied.

The single-valued goal of Strategy A—to build equity—was shown to require close handling of cash funds needed for immediate purchase of seeds, fertilizers, pesticides, and other production needs as well as long term expenses for such things as buildings, machinery, and other farm equipment.

By contrast, the other strategies would refinance for such purchases when and where necessary, looking first to increasing acreage and production and second to other goals such as equity in the land or off-farm investment.

Thus, the strategies for an early and rapid increase in farm size appear to be more appropriate to long term growth in net worth—and equity as well—than the more traditional means of striving directly for it. *(5)*

When Montana Farmers Start To Think Big, They Think Livestock

The average Montana farmer—like most farmers everywhere—tries to earn more from his farm.

To this end, he is likely to enlarge his farm, start or add to a livestock enterprise, or use a combination of these courses.

From 1954 to 1966, these methods were the most popular among those used by farmers who increased their net incomes in the Treasure State.

An Economic Research Service analysis of Montana agricultural statistics shows that during the 12-year period:

—The number of farms in the State decreased while the size of the average farm grew.

—Farmers were more selective in choosing specialized farming operations and less inclined to diversify.

—More acres went to livestock, and less to crops.

—Farm production expenses rose, with livestock, fertilizer, and interest rates on farm mortgages going up the fastest. Yet gross farm income tended to keep pace with costs of production.

—The average net farm income increased statewide, partly because of farm enlargement and also because farmers made more profitable use of land, fertilizer, and new crop varieties.

For the many smaller farms with net farm income below the State average, intensified farming — maximum use of land through irrigation, fertilization, and other improved farming methods—may be the answer.

For those on the upside of the State's average net farm income, a different kind of problem arises. As farms grow fewer in number and larger in size, and as farmers turn increasingly to livestock enterprises, farm resources become more firmly fixed.

As a result, farming decisions tend to become longrun and there is less opportunity for year-to-year production and land use adjustments—which are traditionally characteristic of the Montana farmer. *(22)*

Wheat's Origin Is Unknown, But It's Grown Almost Everywhere

The United States produces more types of wheat in volume than any other nation in the world. But how wheat came to this country is in doubt.

Traces of wheat have been uncovered in the diggings of many early civilizations. It was grown in southwestern Asia, supposedly man's first home. But the origin of wheat still remains a mystery.

The common ancestor of all wheats is believed to be *wild einkoin,* still seen growing in the Balkan States.

Wheat probably arrived in America with the conquistadors. Later, it became an important crop in the early Virginia colonies along the Atlantic Coast.

Not only important in the United States, wheat is grown in nearly every country and covers more than 20 percent of the world's cropland.

There have been major improvements in the wheat plant, too. For years, progress was slow. The best grain from one year's harvest was selected as the next year's seed.

In the 20th century, however, plant scientists have been breeding new and improved wheat varieties.

Only three species of wheat are now important commercially—common wheat, club, and durum. They account for 90 percent of all wheat grown.

Besides species, wheat may be further classified by the texture of the ripened kernel, color of the kernel, and the wheat plant's growing habits. *(23)*

PROBLEMS IN PARADISE

It was the time-worn struggle of people versus land. So planners prescribed comprehensive zoning to keep haphazard urban growth from spoiling Paradise's beauty.

It's the Paradise of the Pacific. But even Paradise has to contend with urban sprawl.

Four-fifths of Hawaii's populace lives, works, and plays on the island of Oahu—which contains less than 9 percent of the State's total land area. Oahu also has much of the State's prime agricultural land.

Until Hawaii cracked down on haphazard urban growth, population pressures were pushing Oahu's urban sector out into valuable farmland. While this land shifted from plow to pavement, land less well suited to agriculture was left undeveloped. Not only were these growth patterns costly: they threatened to spoil the island's beauty.

To keep their paradise as perfect as possible, Hawaiian planning officials prescribed a comprehensive zoning plan. But they went a step further than most States, which leave zoning up to individual counties. Hawaii pioneered in creating a centralized State agency empowered to zone all land within State boundaries.

How well has Statewide zoning worked? In Hawaii's case, quite well—although it has not solved *all* the problems of urban pressure.

Scattered urban development has been greatly reduced by confining such growth to urban districts. These are areas characterized by city-like land uses plus reserve areas where future urban growth is probable and desirable in terms of potential economic development, available public facilities, and job opportunities.

These urban reserve areas, which provide a "10-year supply" of land for future development, have dampened the enthusiasm

for land speculation within urban districts.

Much of Hawaii's prime agricultural land has been placed in agricultural districts to protect farmers from urban encroachment and excess taxation.

Land in agricultural districts can be used for other purposes only when a special permit for such uses has been issued by the State's Land Use Commission.

Special permits are issued when nonconforming uses are judged beneficial to the State's long term growth plan and when they don't alter the character of nearby land.

For example, the Commission has approved construction of a convalescent home and establishment of a communication satellite earth station in agricultural districts. It also has granted petitions for the formation or expansion of small business establishments to serve local needs in agricultural districts.

And in cases where land was not particularly well suited to agriculture or related activities, petitions have been approved for larger establishments. But petitions for even very small residential subdivisions often are denied.

There are two other types of zoning districts within Hawaii: rural and conservation.

Rural districts are composed of small farms intermingled with low density residential areas. Residences are limited to one house per half acre and the minimum size for a farm is also set at half an acre. Public buildings and facilities are allowed. All other land uses are forbidden unless a landowner is granted a special permit.

Conservation districts include the land used for forestry, water conservation, preservation of natural wildlife and vegetation, recreation, and parks.

Regulations are quite rigid when they concern the conservation of important watersheds and scenic areas. But some conservation lands have limited watershed and scenic value. In such cases housing is sometimes allowed.

Landowners in Hawaii not only can petition for nonconforming uses of land within districts, but also can petition for revisions in district boundaries.

Boundary changes approved during 1964-67 took away about 2,700 acres of land from agricultural districts and 1,000 acres from conservation districts. Land in urban and rural zones increased by 3,200 and 500 acres, respectively.

On Oahu, where population pressures are greatest, some 1,618 acres were shifted to urban uses during 1964-67. During the same period, petitions for boundary changes covering some 1,800 acres on Oahu were denied.

The major boundary change was made to enable an investment company to shift 1,370 acres of land from agriculture to urban use for a resort and residential community. The remainder consisted of small areas ranging from less than 1 to 65 acres. In almost every case, these parcels were contiguous with existing urban districts.

To keep zoning abreast of State needs, Hawaii's Land Use Law provides for a comprehensive review of all district boundaries at 5-year intervals. *(6)*

To Keep Men Farming, Hawaii Lowers Tax on Dedicated Land

Rising taxes can drive farmers out of business almost as fast as high-rise buildings on neighboring property.

While Hawaii's zoning laws have protected farmers from urban encroachment (and the higher taxes that cities bring), they haven't halted the steady appreciation in farmland values. And as these values go up, so too do farmers' taxes.

Much of Hawaii's agricultural land is operated by tenants who have long term leases. Typically, these tenants are required to pay the real property tax on the land.

To keep these men in the business of farming, Hawaii's Land Use Laws permit the dedication of land to agricultural uses. Dedicated land is then assessed at a value based solely on that use. (Nonfarm landowners may also dedicate land in urban areas to certain uses such as open space and public recreation.)

Through 1967, approximately 14 percent of the farmers in the State dedicated all or part of their land to agriculture. Most of these were small operators. While the total acreage dedicated to agriculture is still small, it has increased steadily in recent years.

Tax reductions on dedicated land reached a total of $76,657 in 1967.

Thus far, most of the land dedicated has been in agricultural districts. Farmers must petition to dedicate their land—and such petitions frequently aren't approved for farms in urban districts since the dedication would conflict with the overall development plan of the State.

Interviews with persons who have dedicated their land show that tax breaks aren't their only reason for choosing this course.

Farms located on the fringes of urban zones or in rural areas face strong pressures from residents living in the area. The residents want neighboring farms developed for two reasons:

—the development of the farm into urban use will increase the value of their homes; and

—many homeowners prefer not to live next to farms because of inconveniences associated with it, such as smell and noise.

Land dedication provides the farmer with a government approved means of shielding himself from such pressures. *(7)*

millers sift alternatives

What does it take to keep a mill operating at near peak capacity? Diversification is choice of some operators; others find they must modernize, integrate, or cut price.

It may be disillusioning to note that Mom's traditional homemade cake is often purchased as a boxed pre-mix today.

But to the flour milling industry it means better business. Premixed flour products have provided the millers with another outlet for flour.

And the situation that brought this about helps explain the current state of the industry.

For the most part, flour millers —like many others in the wheat economy—suffer from excess capacity. That is, their plants are larger than either the grain supply available to them or the ultimate consumer demand for their products.

This is true in spite of the fact that the number of mills in the United States has narrowed down from 8,436 in 1907 to 352 in 1967.

Since 1930, however, when there were 4,727 flour mills, milling capacity has dropped only 11 percent and wheat flour production, though fluctuating from year to year, increased overall about 8 percent.

On the average, therefore, the percent of flour mill capacity used has actually risen somewhat in recent years.

From 1957 to 1965, flour production went up at the rate of ¾ of 1 percent a year and this trend is expected to continue through 1970. New and improved products have created new markets for flour.

Flour milling firms, to improve or maintain their competitive positions, have turned to manufacture of flour mixes, cereals, snack goods, and similar diversifications — often in consumer-packaged form or for institutional use. They have also turned to feed manufacture and to merchandising of wheat and flour.

Some firms have combined to form an integrated operation that interlinks many channels of the wheat market economy.

These firms operate their own grain elevators where they pick and choose the specific quantities and qualities of wheat they want. They control their own methods of transporting grain to their mills and some even own captive markets—such as bakeries, cereal and snack manufacturing plants —for their milled products.

Pneumatic handling has replaced the bucket elevators and screw conveyors in many mills. This reduces the flour dust fire hazard, improves sanitation, cuts space requirements, and facilitates continuous operation and analysis of the product.

Impact milling where used by millers has produced greater yields and finer flour than conventional roller milling equipment. Cleaning time and equipment shutdown costs have also been cut.

Use of air classification tech-

niques in the future will enable the miller to produce flour of a high protein content even from low protein wheat. (Low protein flour is used in cakes, high protein flour for bread.)

Today a flour mill with a daily capacity of about 6,000 hundredweight appears technically to be the most profitable.

But in practice the costs of transporting grain and mill products offset the technical balance. Therefore, the best sized mill in terms of profitability may actually average only slightly over 2,400 hundredweight in daily capacity.

Mills with capacities of less than 1,000 hundredweight are declining in importance. Most do not have the economy-of-scale advantage enjoyed by larger competitors and they drop out.

Others drop out because the market for flour produced primarily for the family is diminishing.

It costs the remaining small millers as much to produce family flour as flour sold to commercial bakeries, but gross margins on a recognizable mill-brand family flour are generally larger than on bakery flour.

Thus, a high-cost, small-capacity family flour milling plant may still show profits when the same size plant producing only bakery flour would have to go out of business.

Some family flour mills are also able to show profits because their plants and equipment are old and are largely, if not completely, depreciated.

If the small mill is located in a rural area it can usually get its wheat at a lower price than larger mills who must compete with each other for grain supplies from the terminal wheat market.

Many smaller mills in rural areas also manufacture millfeed as a byproduct and get high prices by selling retail to nearby farmers. *(8)*

Refining Capacity Slides Upward For U.S. Edible Fats and Oils

All the Nation's refiners of edible fats and oils don't work around the clock, 7 days a week, 52 weeks a year.

If they did, they would be able to produce 12.7 billion pounds of edible fats and oils a year (according to September 1967 figures).

This estimate of maximum annual refining capacity is 43 percent above the 1956/57 level. And it is expected to go up another 1.2 billion pounds by early 1970.

During the year ending September 1967, the industry operated at about two-thirds its maximum capacity for refining, further processing, and production of finished products. The packing rate was at about half of the maximum capacity.

The limited capacity of certain pieces of processing equipment and of storage space, plant shutdowns for repair and maintenance—as well as scarcities of power, raw materials, and labor—all serve as deterrents to operation.

On an average the industry put in a 6-day week, 48 weeks of the year, with two or three 8-hour shifts when producing intermediate or finished products. Packers worked a slightly shorter schedule.

What happens during these working hours depends on the type of fat or oil being processed and on its ultimate destination—salad oil, cooking oil, margarine. A representative picture can be drawn by sketching the stages in the complete refining of vegetable oil.

Degumming removes nonfatty materials, mostly phosphatides, from the crude oil. A major byproduct of this process is lecithin.

Refining further purifies the oil. The byproduct of soapstock is an ingredient in soap and glycerine.

Bleaching reduces the color of the oil after refining has been completed.

Hydrogenation converts liquid oils into a solid or semisolid state suitable for shortening or margarine. This process also stabilizes the oil and retards spoilage.

Winterizing conditions the oil so that it stays liquid at low temperatures.

Not all the refiners produce finished consumer-ready products. The total pack of those who did was 8.6 billion pounds—4.5 billion pounds liquid, the rest in solids. Of this, 79 percent of the liquids and 38 percent of the solids were shipped in bulk. The remainder was shipped in consumer-sized containers, large tins and drums.

There are now 83 U.S. refineries (not counting some being built). They span 23 States but are usually clustered in soybean and cottonseed producing areas or in large metropolitan centers.

Since vegetable oils make up the major portion of domestically produced edible fats and oils, the refining industry is largely dependent upon the output of the oilseed crushers.

The size of the refineries varies widely.

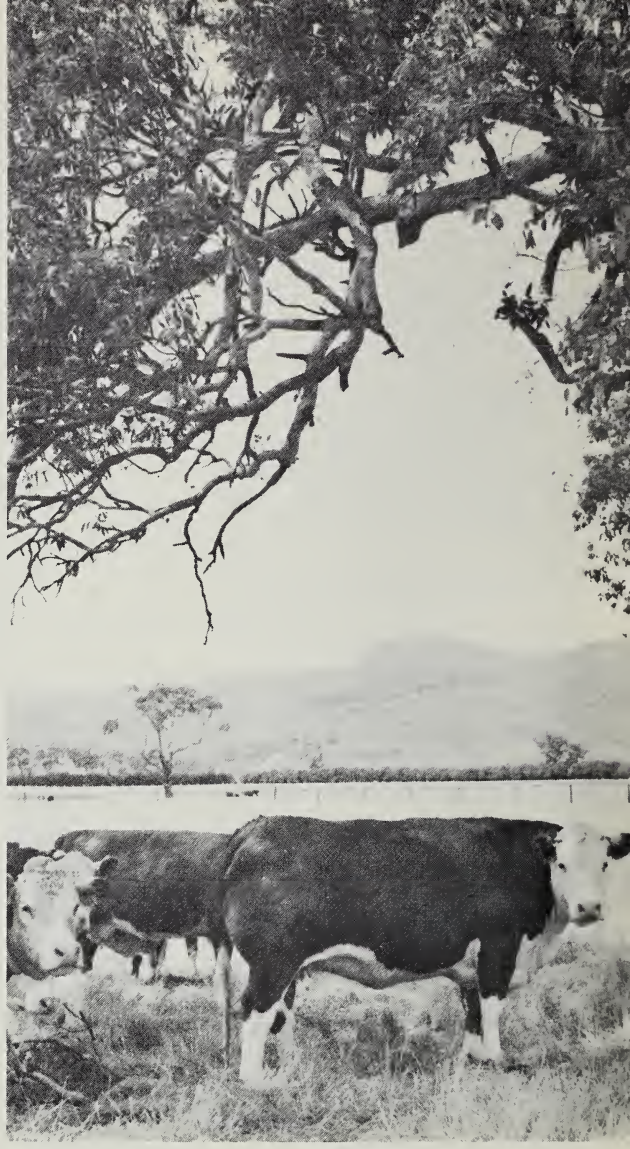
About 39 percent of those plants surveyed had maximum annual capacities of less than 100 million pounds.

Another 38 percent had annual capacities of over 200 million pounds and accounted for 68 percent of the industry's total capacity.

Plants with capacities between 100 million and 200 million pounds accounted for another 20 percent of the industry's capacity.

When all sizes are added up, about three-fifths of the total number of plants accounted for around 90 percent of actual production and 84 percent of the maximum capacity. *(9)*

AUSTRALIAN AGRICULTURE: a look ahead



Beef cattle fattening on pasture and enjoying shade of a eucalyptus tree are a typical scene in rural Australia—vast supply house of many farm products likely to enter world markets in increasing volume.

The "bush" is falling under the plow. Cotton is flourishing on newly irrigated areas of the "outback."

Australia's agricultural frontiers are indeed widening. And Australian agricultural products are entering the world marketplace in increasing volume.

From the wharves at Sydney and Perth, wheat goes to all parts of the world—to compete with wheat grown by U.S. farmers. At Melbourne and Adelaide, dairy products and fruit are among cargos bound for Europe. Much of the beef and some of the wool that leaves Brisbane docks is destined for U.S. consumers.

And by 1980, we can expect bigger output and exports of most "Down-Under" commodities that compete with our own.

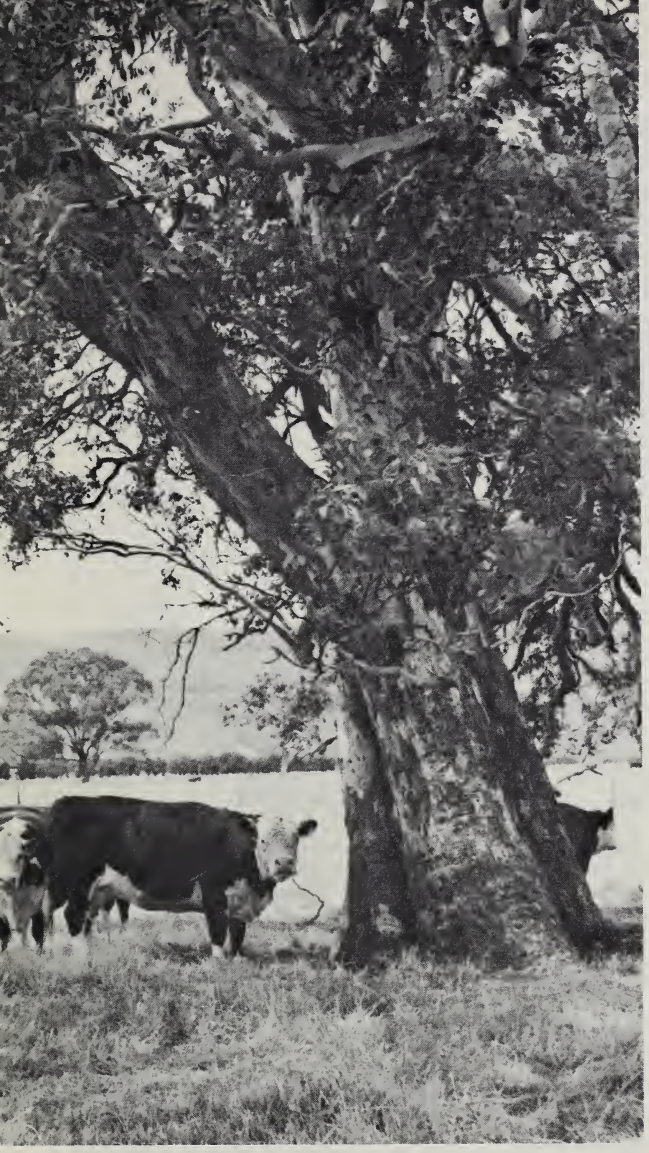
This is one of the agricultural projections made by a team of Australian economists in a study recently published by USDA. The study stemmed from a contract sponsored jointly by USDA's Economic Research Service and Foreign Agricultural Service.

From the standpoint of direct competition in foreign markets, the most important findings of the study related to grains, fruits, dairy products, tallow, and hides and skins.

As the United States is Australia's leading market for beef, the future of the Australian meat situation is predicted in the study. And unless unforeseen changes occur in the makeup of diets—or in the U.S. meat structure—we are likely to continue indefinitely as Australia's major customer.

Projections for cotton and tobacco production are also significant. Our exports of these commodities to Australia can be expected to shrink as Australia's output expands.

For example, Australian cotton planters har-



vested an average of only 4½ million pounds annually between 1958/59 and 1961/62. Imports averaged 54 million pounds a year.

Since then, irrigation has steadily boosted cotton output. By 1980, it is projected at 150 million pounds (300,000 bales of 500 pounds)—with imports dropping to 22 million pounds (44,000 bales).

For tobacco, the projected decline of imports is more gradual.

Domestic production may increase about one-fourth to 33 million pounds by 1970. But the rate of increase is then expected to level off to 3 percent per year.

Thus, imports are expected to average around the present 27-million-pound mark into the 1970's and gradually decline to 23.6 million pounds by 1980. (It is assumed that future production will increase with the setting of higher minimum levels of domestic leaf as a percentage of total supplies of tobacco leaf.)

What Australia does with grain—especially wheat—will have much more impact on export earnings of many U.S. farmers.

Wheat. In the past 20 years Australian wheat growers have shown their ability to increase both acreage and yields at the same time—and to enlarge their share of the world market as well.

As in most high income countries, per capita home use of flour and other wheat products has been declining. Meanwhile use of wheat as feed has dropped substantially.

With more wheat available for export, Australia has vigorously sought new foreign markets. In the process it has become a major supplier (along with Canada) to Communist China. Sizable sales have also been made to the USSR. And the United Kingdom is, of course, a traditionally big and steady market.

The 1980 wheat harvest is forecast at about 16.1 million metric tons (591 million bushels), according to the "most likely" projection of the Australian economists. (Their study also includes "low" and "high" projections.) Exports in 1980 are forecast at 13 million tons (478 million bushels).

Harvests and exports of this size would be 42 and 67 percent of average (1964-68) U.S. production and exports respectively.

The 1966/67 Australian wheat crop has already yielded 467 million bushels. This is not far below projected 1975 output. And the 1968/69 crop is preliminarily forecast at 530 million bushels. This would be well above the 1975 production level of 501 million bushels as projected in the study.

Meanwhile, Australia's per capita consumption of wheat by 1980 is expected to be 15 percent below that in 1965.

Feed grains. Up to now, Australia's share of world coarse grain exports has been only about 10 percent. It has been supplying about a quarter of the world's oat exports and about 8 percent of barley exports. No corn.

But there is now much interest in growing corn and grain sorghums for export to Japan. Most plantings of these are planned for new development areas of Queensland, Western Australia, and

AUSTRALIAN PRODUCTION AND EXPORTS OF SELECTED FARM COMMODITIES PROJECTED TO 1980 [1]

Item	Base period 1958/59-1961/62		1975		1980	
	Production	Exports	Production	Exports	Production	Exports
	1,000 metric tons					
Beef and veal [2]	782	266	1,099	456	1,196	504
Mutton	360	61	427	125	441	127
Lamb	206	—	232	−27	251	−51
Milk [3]	372	160	547	215	551	182
Wheat	6,085	4,376	13,635	10,805	16,085	13,009
Rice [4]	90	55	198	81	227	94
Barley	1,173	683	1,429	567	1,610	624
Oats	1,201	307	1,397	294	1,549	341
Fruit (canned and dried)	—	146.7	—	259.7	—	271.4
Cattle hides	—	60.4	—	122	—	144
Wool	748	723	885	491	916	534
Tallow	—	71.9	—	113	—	149

[1] Projections are "most likely" medians. [2] All meats carcass weight. [3] Whole milk equivalent of processed products. [4] Milled equivalent.

Space Surplus

There may be room at the top for some people, but there's room Down Under for more.

Australia has an area of nearly 3 million square miles and a population of only 12 million: Four people per square mile.

Immigrants—more than 100,000 a year since 1965—have been doing their bit to build up Aussie numbers, but the effect hasn't been explosive.

At the present rates of net immigration and births, Australia would have nearly 17,268,000 people by 1980—according to estimators in the Commonwealth Bureau of Census and Statistics.

But some demographers figure that the flow of immigrants will slow down to about 50,000 a year. They also view the recent slight downtrend in the birthrate as the start of a long term decline.

If they are right, Australia's 1980 population might be only 14,790,000—not yet five people per square mile. *(11)*

the Northern Territory.

Small quantities of grain sorghum have already been sold to Japan, and growers are optimistic about this market. (Japan is the No. 1 cash market for U.S. sorghum and a main outlet for U.S. corn).

Rice. Australian rice is mostly short-grain. It is not in strong demand either at home or by neighboring Pacific Island customers. They prefer medium or long-grain varieties.

Some long-grain rice is now being grown with the benefit of irrigation in new production areas of Queensland and northern Australia. If these plantings prove successful, they might eventually put Australia in a better position vis-à-vis U.S. rice. But no sharp changes in rice production, consumption, or exports are indicated. *(10)*

Roundup

At 186 million, Australia's cattle and sheep outnumber its people more than 15 to 1.

The livestock headcount on March 1, 1968, showed sheep numbers at nearly 167 million. Our flock is under 20 million.)

Australian cattle and calves totaled over 19 million. About 13½ million were beef animals. (U.S. total cattle, 109 million; beef cattle, 86½ million.)

Shorthorns and Herefords dominate the Aussie beef herd, but Angus, Santa Gertrudis, and Brahman are in there, too. Some Australian beef we import today may be from descendants of Texas breeding cattle Australia once imported from us.

Wary of blue tongue disease, however, Australia stopped cattle imports about a decade ago primarily to protect its numerous and valuable sheep. Blue tongue ("false foot-and-mouth") is an infectious virus still plaguing U.S. livestock. *(12)*

How Trade Figures:

JAPAN: Agricultural *imports* in 1967, valued at $3,296 million were up 74 percent from 1962.

During the 6-year period, imports of animals and animal products rose 68 percent to $684 million. Feed grain imports more than tripled to $485 million. Fruits and vegetables increased over threefold to $194 million.

The United States—Japan's major supplier—filled about 31 percent of the Japanese farm import basket in 1967. This was about the annual average for the entire 1962-67 period.

Australia—second largest supplier—had a 1967 share close to 14 percent, but slightly under its 6-year average share.

CHINA (TAIWAN). Imports of farm products totaled $184 million in 1967—up 51 percent from $122 million in 1966.

Five commodities made up over four-fifths of the 1967 value: oilseeds ($46 million), cotton ($45 million), grains ($34 million), animals and animal products ($17 million), and tobacco ($11 million).

Over two-thirds of the grain imports were for use as food, and the United States supplied 86 percent of them. Overall, the U.S. share of Taiwan's farm imports was 65 percent in 1967.

REPUBLIC OF KOREA. Food grains accounted for 40 percent ($71 million) of the country's $177 million agricultural imports in 1967. Cotton imports ($49 million) took up much of the balance.

The United States provided over 70 percent of these imports.

AUSTRALIA: Agricultural *exports* in 1967 climbed to $2,249 million —nearly a fourth more than they were 6 years ago. About 12 percent of the total went to U.S. buyers.

Animals and animal product outshipments (with wool predominating) added up to $1,336 million. U.S. purchases of these, at $244 million, represented an 18-percent share. But the combined takings of Western European countries came to $706 million.

Food and feed grains, at $565 million, were second among Australian exports. Wheat exports to Japan totaled $32 million and to the United Kingdom, $19 million. Fruits and vegetables earned about $120 million, as did sugar. The U.S. took about 21 percent of the sugar export total.

NEW ZEALAND. At $886 million, farm exports in 1967 dropped 10 percent below the value a year earlier. Animals and animal products made up 93 percent of the country's farm export total, with the U.S. getting 15 percent. Outside of this category, U.S. purchases were not significant. *(13)*

Acres of U.S. Exports Find A Way to Foreign Markets in '68

About 71 million acres of U.S. land were used to produce the farm products that were exported in the year that ended June 30, 1968.

Out of last year's wheat producton, 1967/68 exports took 63 percent. Export shares for other crop outputs were 64 percent for rice; over 70 percent for dry edible peas; about 50 percent for hides and skins and cotton; and 40 percent for soybeans and soybean products. About one-third of our tobacco, dried prunes, and hops went abroad.

Feed grains are exported in large volume but are a relatively small percentage of total production because so much of these crops are not sold, but used on farms where they are grown. Even so, corn exports accounted for 23 percent of sales from farms, and barley 11 percent. *(24)*

Remote Sensors Are Developing New Pictures for U.S. Agriculture

Remote sensors — cameras, scanners, radar, and the like— are a 20th century technological advancement from which agriculture is benefiting.

At the present point of development, remote sensing from satellites and high flying aircraft can locate cultivated acreage, show its dimensions, and give a good idea of world land use.

Two other determinations— specific crop identification and yield indication for a photographed area—are under study.

The development of remote sensing is especially timely since it coincides with the growing pressure in many countries to produce more food for larger populations.

Two areas usually covered in national agricultural plans are development of new lands and improvement of traditional lands under cultivation.

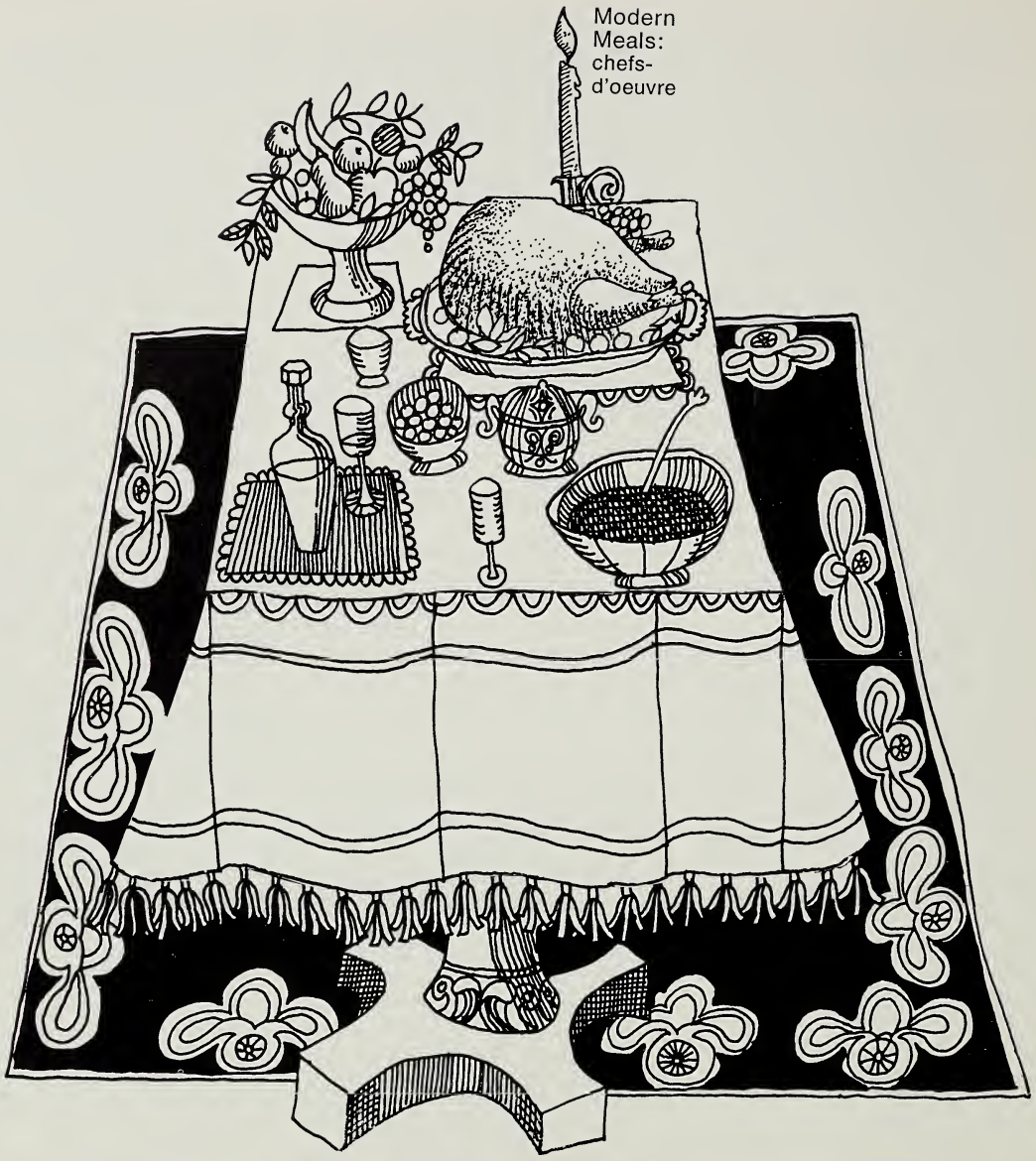
But before planners can come up with reasonable plans, they need accurate blueprints of existing agricultural conditions. And this takes more accurate data than many countries have.

Using traditional statistical methods, the improvement of data collection in developing countries is a very slow and, in some instances, extremely difficult process. There is a real need for rapid gathering of correct data on cultivated land and crops.

A remote sensor system could, ideally, scan and map an entire country in a matter of days and repeat the process several times throughout the growing season.

In this way it would provide "instant information" about planting, growing, and harvesting conditions—and also be capable of sounding a quick warning of disease, drought, or other marks of crop failure which might then be averted or controlled. *(14)*

Modern Meals: chefs-d'oeuvre



Modern meals are the masterpieces of science and industry. Every year something new comes along to enhance the combination of easy preparation and better quality.

Mary Smith, age 23, newly married, is fixing the holiday dinner for her in-laws this year. She's a little nervous. But she's allowing herself plenty of time to turn out a perfect meal.

She's making her mincemeat pies the night before, along with fixing fresh greens for salad. Her self-basting turkey, already stuffed, will go into the oven on the day of the dinner. The rolls (brown-and-serve type) and the vegetables (frozen broccoli with cheese sauce made from a mix, and candied sweetpotatoes) are the only things Mary has to fix at the last moment.

Mary is too young and too busy to ponder the fact that her holiday dinner is the product of many modern-day miracles in the food industry.

But Mary's grandmother recalls the day when the mincemeat for pies had to be made in au-

tumn, when the apples ripened. The turkey, grown at home, was a year long enterprise, culminating in the messy business of slaughtering, plucking, and cleaning the bird.

The vegetables—if she'd waited till the last minute — wouldn't have been there. They all had to be canned, in midsummer's heat, by the housewife herself. As for broccoli and fresh greens for salad, Mary's grandmother couldn't even consider them for midwinter menus.

Today, Mary doesn't even bother to plan ahead for such things as butter and jelly and pickles on her holiday menu—but these items would have cost her grandmother hours of preparation time.

Less time spent in cooking, more foods available year-round are only part of Mary's endowment.

The foods she buys keep longer than they used to—thanks to highly sophisticated processing techniques, chemical additives, and better equipment with which to preserve food.

A number of foods are also fortified with vitamins and minerals to make them nutritionally better.

But if Mary has it good, her daughter and her granddaughter will have it still better.

In all probability, Mary, Jr., will serve her family oblong tomatoes, whose shape is nice for slicing and has cut down on shipping damage. She'll buy her catsups, her gravies, and her pickles in compact freeze-dried sheets—not in jars. They'll keep indefinitely without refrigeration. And she can reconstitute them at her convenience. Spray cans of salad dressings, cake mix batter, or whipped potatoes will line her pantry shelves.

She—and her mother, too, in her later years—will have not one but several refrigerators. Insulated wall cabinets will permit them to store meat right next to the oven. A special ice cube maker might hang above the sink; another wall unit might be next to the serving area. Microwave and infra-red ovens will cook foods in minutes, or even seconds, instead of hours.

And a generation later, when Mary III is entertaining her in-laws, she may never see the inside of a supermarket. With a videophone she may be able to check prices and qualities of groceries at the store and to place her order without leaving the house.

She may never even cook at all, according to many of today's technicians who are designing the kitchens of tomorrow. She may simply program her menus for the week into a computer, put her groceries into the right storage spaces, and then sit back while mechanical arms select, cook, and serve the food she ordered. *(15)*

The Nation's Holiday Nut Bowl: Slightly Smaller, Still Plentiful

At any other time of the year they're liable to be slivered and blanched, roasted and salted. But for the holiday season, nuts in the shell are the traditional favorite.

This year's production of the "Big Four" is estimated at about 264,000 tons.

Pecans and walnuts each fill about a third of this 264,000-ton nut bowl, almonds account for another 28 percent, with filberts bringing up the rear at 4 percent.

Look for fewer almonds from California this year, though the crop is still above average.

Happily for nut fanciers, production of walnuts and filberts is up—over 15 percent above 1967—with Oregon, as usual, accounting for over 90 of the filberts.

Pecans, which prefer the southern climes, did not produce as heavily this year as last in most States. *(16)*

U.S. Cigarette Puffs Per Person Drop During First Half of '68

Are people smoking fewer cigarettes? Or are fewer people smoking?

The "18 and older" population is growing, but total U.S. cigarette consumption in the first half of 1968 at 271 billion was down 2 percent from a year earlier. It's likely to average close to 1967 levels during the rest of the year.

Domestic use along with exports and shipments would bring this year's production near the record 576 billion of 1967.

This situation makes for a larger decline in per capita consumption of cigarettes than occurred last year when it fell 0.2 percent.

This year's decline may reflect higher retail cigarette prices and the increased publicity given to studies relating smoking and health. Anti-cigarette advertisements went on the air late in 1966 and the "Second Surgeon General's Report" on smoking and health was published in mid-1967.

The Federal Trade Commission and the Department of Health, Education and Welfare submitted reports earlier this year with recommendations that may affect cigarette consumption in the coming year.

Both reports called for stronger warning labels and a statement of tar and nicotine content on cigarette packages. And the FTC recommended a larger HEW budget for health education and development of less hazardous cigarettes.

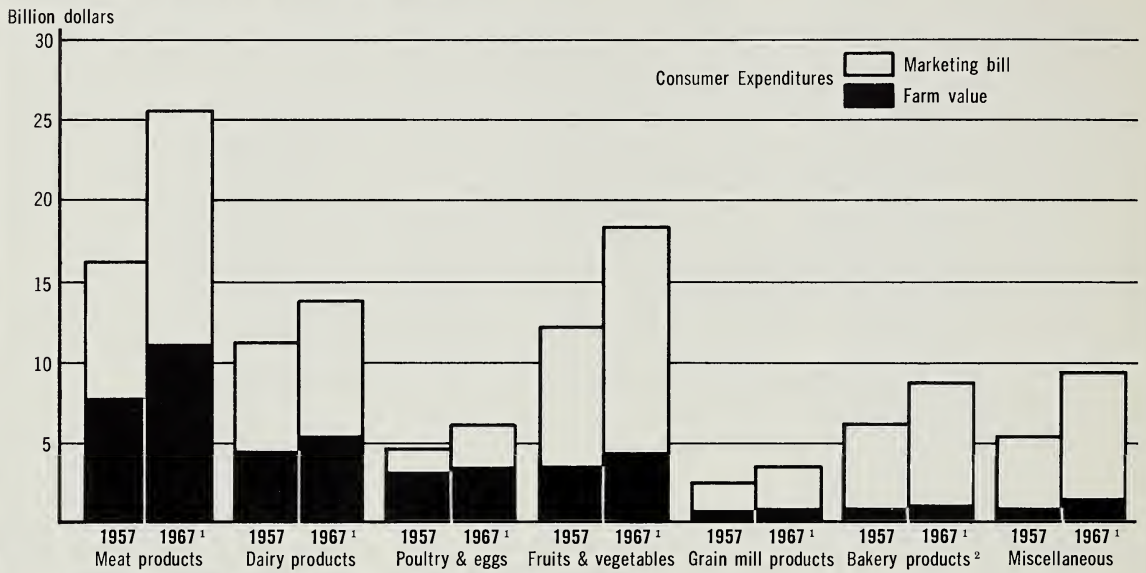
Manufacturers spent $312 million last year for cigarette advertising and promotion—73 percent of it for television.

The FTC called for a ban on TV and radio advertising of cigarettes, or, failing that, limiting such advertising as to hours, extent, and type of programs on which it may appear. *(17)*

CONSUMERS ACROSS THE COUNTRY paid $85 billion during 1967 for food that originated on U.S. farms. This is about $2 billion above the 1966 level, a smaller than usual annual increase, and a little over $25 billion more than 10 years earlier.

Total returns to U.S. farmers for the foods amounted to $27.4 billion in 1967. This is $0.7 billion less than in 1966 and the first decline since 1959. However, 1967 returns were the second largest on record and $7 billion more than 10 years ago.

The food marketing bill—the cost of getting goods from the farmer to the consumer—was $57.6 billion in 1967, compared to $37.9 billion in 1957. Increases in the volume of food marketed are responsible for about half of the $20-billion gain. Rising unit costs accounted for the remainder. Higher prices for labor, packaging materials and other inputs, and the growing consumer demand for processed foods and restaurant meals have boosted the cost per unit of product marketed. *(19)*



1 Preliminary. 2 Includes farm value of flour, milk, eggs, fruit, lard, veg. shortening, sugar.

Gourmet Items Fill Only a Small Corner of Imported Food Basket

Pizza and quiche, fondu and brioche. They're all becoming a part of our eating vocabulary.

Yet the price we pay to give our food a foreign accent isn't much more than it was in the late 1920's, when it was $19 per person yearly.

Now our annual per person bill for imported agricultural items is about $23. That's $1.90 a month, or less than 4½ cents a day.

The Nation's total outlay for agricultural imports for the year ending June 30, 1968, was about $4.7 million, compared with around $4.5 million the previous 2 years. Higher price tags on foreign products—not greater volume—accounted for most of the value rise.

Gourmets' delights — such things as marzipan and saffron, pignolia nuts and Pecorino cheese —make up the smallest portion of our imported fare.

It's the things average Americans regard as staples that are the biggest part of the tab.

Coffee alone cost us $1 billion in fiscal 1968—or almost a fourth of our total agricultural import bill. Add tea, cocoa, bananas, and meats. The combination then accounts for over half the national check.

And, of course, things agricultural aren't all edible. So in your budget for imports, don't forget to allot a few cents for silk, certain cottons and wools and tobaccos, and a bit of rubber, waxes, bristles, and such. *(18)*

Eggs Sunny Side Up: Last Year Everyone Ate One More a Month

Time was when each U.S. civilian was eating an outsized annual dish of eggs—403 to be exact. The year was 1945.

Since then the Nation's appetite for eggs began to flag. The reason is tied in with a growing tendency to eliminate breakfast as a full-course meal. Egg eating dropped to a 25-year low of 313 eggs per person in 1966.

However, 1967 egg output hit an alltime high of 5.8 billion and average price per dozen dipped 8 cents under 1966 levels.

In response, people added about one egg a month to their diets and increased consumption to 324 per person in 1967. *(20)*

Addresses of state experiment stations:

In response to requests from readers wishing to obtain recent publications and source material published through state experiment stations, we are publishing a list of the experiment stations and their addresses. This list will be printed again in July.

STATE	CITY	ZIP CODE
ALABAMA	Auburn	36830
ALASKA	Palmer	99645
ARIZONA	Tucson	85721
ARKANSAS	Fayetteville	72701
CALIFORNIA	Berkeley	94720
	(317 University Hall 2200 University Ave.)	
	Davis	95616
	Los Angeles	90024
	Riverside	92502
	(Citrus Research Center)	
COLORADO	Fort Collins	80521
CONNECTICUT	New Haven	06504
	(P. O. Box 1106)	
	Storrs	06268
DELAWARE	Newark	19711
FLORIDA	Gainesville	32601
GEORGIA	Athens	30601
	Experiment	30212
	Tifton	31794
HAWAII	Honolulu	96822
IDAHO	Moscow	83843
ILLINOIS	Urbana	61803
INDIANA	Lafayette	47907
IOWA	Ames	50010
KANSAS	Manhattan	66504
KENTUCKY	Lexington	40506
LOUISIANA	Baton Rouge	70803
	(Drawer E University Station)	
MAINE	Orono	04473
MARYLAND	College Park	20742
MASSACHUSETTS	Amherst	01002
MICHIGAN	East Lansing	48823
MINNESOTA	St. Paul	55101
	(St. Paul Campus)	
MISSISSIPPI	State College	39762
MISSOURI	Columbia	65202
MONTANA	Bozeman	59715
NEBRASKA	Lincoln	68503
NEVADA	Reno	89507
NEW HAMPSHIRE	Durham	03824
NEW JERSEY	New Brunswick	08903
NEW MEXICO	University Park	88070
NEW YORK	Ithaca	14850
	(Cornell Station)	
	Geneva	14456
	(State Station)	
NORTH CAROLINA	Raleigh	27607
	(Box 5847)	
NORTH DAKOTA	Fargo	58103
	(State University Station)	
OHIO	Columbus	43210
	(Ohio State University)	
	Wooster	44691
OKLAHOMA	Stillwater	74075
OREGON	Corvallis	97331
PENNSYLVANIA	University Park	16801
	(106 Armsby Building)	
PUERTO RICO	Rio Piedras	00927
RHODE ISLAND	Kingston	02881
SOUTH CAROLINA	Clemson	29631
SOUTH DAKOTA	Brookings	57007
TENNESSEE	Knoxville	37916
TEXAS	College Station	77843
UTAH	Logan	84321
VERMONT	Burlington	05401
VIRGINIA	Blacksburg	24061
WASHINGTON	Pullman	99163
WEST VIRGINIA	Morgantown	26506
WISCONSIN	Madison	53706
WYOMING	Laramie	82070
	(University Station Box 3354)	

Numbers in parentheses at end of stories refer to sources listed below:

1. J. E. Lee, Jr., Resources Ownership and Use-Rights in Agriculture (S); 2. A. Fox and others, Extent of Farm Pesticides Used on Crops in 1966, AER-147 (P); 3. W. D. Rasmussen (SM); 4. L. V. Summers, The Economic Implications of Grower-Processor Contracting in the Potato Industry (S); 5. D. Bostwick, Partitioning Financial Returns: A Firm Growth Example (M); 6. and 7. T. Lum, S. G. Camp, and K. Gertel, Hawaii's Experience in Zoning, Hawaii Agri. Expt. Sta. (M*); 8. C. Vosloh, Jr., Changes in the U.S. Grain Marketing and Flour Milling Industry (S); 9. Fats and Oils Situation, FOS-244 (P); 10. and 11. F. Gruen and others, Long Term Projections of Agricultural Supply and Demand, Australia, 1965 and 1980, ERS Unnumb. Pub. (P); 12. M. Long (SM); 13. Foreign Agricultural Trade, December '68 (P); 14. S. Baker, An Evaluation of Crop and Land Use in a World Sample of Countries. (M); 15. R. Lifquist (SM); 16. Fruit Situation, TFS-169 (P); 17. Tobacco Situation, TS-125 (P); 18. Foreign Agricultural Trade, November '68 (P); 19. Marketing and Transportation Situation, MTS-170 (P); 20. Poultry Situation, PES-250 (P); 21. N. Guidry (SM); 22. W. G. Heid, Jr. (SM); 23. F. R. Gomme, "Classes of Wheat in the U. S. Wheat Economy," Wheat Situa., WS-206 (P); 24. Foreign Agricultural Trade, December '68 (P).

Speech (S); published report (P); unpublished manuscript (M); special material (SM); *State publications may be obtained only by writing to the experiment station or university cited.

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References in this index are by month and page.

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ECONOMIC TRENDS

ITEM	UNIT OR BASE PERIOD	'57-'59 AVERAGE	1967		1968		
			YEAR	OCTOBER	AUGUST	SEPTEMBER	OCTOBER
Prices:							
Prices received by farmers	1910-14=100	242	253	252	261	267	262
Crops	1910-14=100	223	224	225	226	230	228
Livestock and products	1910-14=100	258	277	276	291	299	291
Prices paid, interest, taxes and wage rates	1910-14=100	293	342	344	354	355	358
Family living items	1910-14=100	286	322	324	337	338	339
Production items	1910-14=100	262	287	287	291	292	292
Parity ratio		83	74	73	74	75	73
Wholesale prices, all commodities	1957-59=100	—	106.1	106.1	108.7	109.1	109.8
Industrial commodities	1957-59=100	—	106.3	106.8	108.9	109.2	109.6
Farm products	1957-59=100	—	99.7	97.1	101.4	102.8	101.3
Processed foods and feeds	1957-59=100	—	111.7	111.7	114.9	115.3	114.7
Consumer price index, all items	1957-59=100	—	116.3	117.5	121.9	122.2	—
Food	1957-59=100	—	115.2	115.7	120.5	120.4	—
Farm Food Market Basket: [1]							
Retail cost	Dollars	983	1,081	1,083	1,132	1,128	[3] 1,133
Farm value	Dollars	388	413	410	438	443	[3] 433
Farm-retail spread	Dollars	595	668	673	694	685	[3] 700
Farmers' share of retail cost	Percent	39	38	38	39	39	[3] 38
Farm Income: [7]							
Volume of farm marketings	1957-59=100	—	124	173	133	133	174
Cash receipts from farm marketings	Million dollars	32,247	42,788	4,897	3,763	3,973	5,200
Crops	Million dollars	13,766	18,383	2,591	1,579	1,744	2,600
Livestock and products	Million dollars	18,481	24,405	2,306	2,184	2,229	2,600
Realized gross income [2]	Billion dollars	—	49.1	—	—	51.6	—
Farm production expenses [2]	Billion dollars	—	38.8	—	—	36.2	—
Realized net income [2]	Billion dollars	—	14.2	—	—	15.4	—
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	[3] 6,383	532	489	470	—
Agricultural imports	Million dollars	3,977	[3] 4,454	376	442	433	—
Land Values:							
Average value per acre	1957-59=100	—	[4] 166	[5] 160	[5] 170	—	—
Total value of farm real estate	Billion dollars	—	[4] 189.5	[5] 182.5	[5] 193.7	—	—
Gross National Product: [2]	Billion dollars	457.4	789.7	—	—	871.0	—
Consumption [2]	Billion dollars	294.2	492.2	—	—	541.1	—
Investment [2]	Billion dollars	68.0	114.3	—	—	127.1	—
Government expenditures [2]	Billion dollars	92.4	178.4	—	—	199.6	—
Net exports [2]	Billion dollars	2.7	4.8	—	—	3.3	—
Income and Spending: [6]							
Personal income, annual rate	Billion dollars	365.3	628.8	638.0	694.1	699.7	702.2
Total retail sales, monthly rate	Million dollars	17,098	—	26,100	29,115	28,941	28,789
Retail sales of food group, monthly rate	Million dollars	4,160	—	5,802	6,239	6,171	—
Employment and Wages: [6]							
Total civilian employment	Millions	63.9	74.4	74.7	75.9	76.0	76.0
Agricultural	Millions	5.7	3.8	3.7	3.7	3.6	3.5
Rate of unemployment	Percent	5.8	3.8	4.3	3.5	3.6	3.6
Workweek in manufacturing	Hours	39.8	40.6	40.7	40.7	41.1	41.0
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	2.83	2.85	2.99	3.04	3.05
Industrial Production: [6]	1957-59=100	—	158	157	164	164	165
Manufacturers' Shipments and Inventories: [6]							
Total shipments, monthly rate	Million dollars	28,745	45,712	45,748	49,708	51,196	—
Total inventories, book value end of month	Million dollars	51,549	82,819	81,968	86,713	86,880	—
Total new orders, monthly rate	Million dollars	28,365	45,928	46,655	50,084	51,610	—

1 Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1959-61—estimated monthly. 2 Annual rates seasonally adjusted third quarter. 3 Preliminary. 4 As of November 1. 5 As of March 1. 6 Seasonally adjusted. 7 Annual and quarterly data are on 50-State basis; monthly data are on 48-State basis.

SOURCES: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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Christmas Island Where?

Do Christmas trees grow on Christmas Island?

Yes and no, but mostly no. It all depends where the Christmas Island is. The world has lots of them in various languages and in every ocean and clime.

If you are an armchair traveler toying with the idea of landing at a Christmas Island on December 25, eschew the travel agent and seek out a cartographer or economic geographer. He'll assure you that every Christmas Island is "away from it all."

If you pick the biggest (one of the two best known) you'll find yourself 150 miles north of the equator in mid-Pacific on a 222-square-mile coral rock—just where Captain Cook found himself on Christmas Eve in 1777.

This sand-covered atoll is said to be a nice spot if you like taro and coconuts and have interests related to guano, phosphate, or mother-of-pearl. There are roads for bicycling, an airfield, and nuclear testing sites, too. Atmosphere is British-American.

Someone with more diversified tastes might prefer the Australian-owned Christmas Island in the Indian Ocean—well off Java Head and only 815 miles from Singapore. Packed on its 55 square miles are 3,381 people, a golf course, tropical forests, fish, fowl, and fruits that thrive with annual 52-inch rainfall and temperatures of 70 to 95.

And for the traditionalist, there's Christmas Island (pop. 175), on Cape Breton, Nova Scotia—with Christmas trees and homegrown cranberries. *(21)*

THE FARM INDEX

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